

USSR

UDC: 681.3.519.2

OTKHMEZURI, G. L., GOGIBERIDZE, A. Sh., GURULI, V. V., ZUBIASHVILI, Sh. M.,
SIRADZE, Sh. M., SIGUA, V. F., DATUASHVILI, A. N., Tbilisi Affiliate of
the All-Union Scientific Research Institute of Metrology imeni D. I.
Mendeleev

"A Device for Determining the Mathematical Expectation of Random Processes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 48, Dec 73, Author's Certificate No 409244, Division G, filed 4 May 72,
published 30 Nov 73, pp 120-121

Translation: This Author's Certificate introduces a device for determining
the mathematical expectation of random processes. The device contains a
pulse generator, source of input information, an amplifier, diodes, a rec-
tifier, and a shifter. The pulse generator is connected to a modulator
directly and to the first input of an interrupter through an accumulator.
The source of input information is connected to the modulator through a
comparison circuit. The shifter is connected through a multiplier to the
output of the device. As a distinguishing feature of the patent, the working
precision of the device is improved by adding magnetic accumulator elements.

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OTKHMEZURI, G. L. et al., USSR Author's Certificate No 409244

The inputs of these accumulator elements are connected to the corresponding diodes, and the diode inputs are connected to the output of the interruptor. The output of the rectifier is connected to the shifter and to the comparison circuit. The modulator output is connected through the amplifier to a second input of the interruptor.

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II. Combinatory Analysis and Graph Theory

A. General Combinatory Analysis Theory

USSR

UDC: 519.1

GOGIN, N. D.

"On a Class of Finite Projective Planes"

Zap. nauch. seminarov, Leningr. otd. Mat. in-ta AN SSSR (Notes of Scientific Seminars, Leningrad Department of the Mathematics Institute, Academy of Sciences of the USSR), 1973, 31, pp 61-101 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V347 by N. Pukharev)

Translation: Let there be defined on the same finite set the field $F(+, \cdot)$ and the near-field $K(+, \circ)$ constructed on the basis of field F . The set F^* of nonzero elements of F is broken down into S_1 and S_2 in such a way that $S_1 \cup S_2 = F^*$, and $S_1 \cap S_2 = \emptyset$. A new multiplication Δ is defined on F by the rule

$$x \Delta a = \begin{cases} 0, & \text{if } a = 0, \\ x \cdot a, & \text{if } a \in S_1, \\ x \circ a, & \text{if } a \in S_2. \end{cases}$$

Then there exist partitions S_1, S_2 such that $F(+, \Delta)$ is a quasi-field Q . Necessary and sufficient conditions are found for the quasi-fields Q_1 and Q_2 obtained with various partitions S_1 and S_2 to have the property

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GOGIN, N. D., Zap. nauch. seminarov, Leningr. otd. Mat. in-ta AN SSSR,
1973, 31, pp 61-101

that multiplication in Q_2 is expressed in terms of multiplication in Q_1 .
The author examines collineations of affine planes constructed over the
resultant quasi-fields. The case where the partition is such that there
is an $x^{-1} \in S_1$ for any $x \in S_1$ is studied in greater detail.

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USSR

UDC 669.71.412

ANDREYEV, A. D., MAKAROV, G. S., GOGIN, V. B.

"Analysis of Some Laws of the Process of Degassing a Melt When Blowing It With an Inert Gas"

Metallized. splavov legkikh met -- V sb. (Physical Metallurgy of Light Metal Alloys -- collection of works), Moscow, Nauka Press, 1970, pp 72-80 (from RZh-Metallurgy, No 4, Apr 71, Abstract No 4G175)

Translation: A kinetic equation is derived which describes the process of degassing aluminum during blowing of the melt by an inert gas. The effect of various factors on the degassing process is investigated. The effectiveness of using an inert gas when blowing the melt through tubes in a reverberatory furnace is low. It can be improved by making the bubbles of inert gas smaller and creating conditions insuring contact of the entire mass of the melt with the inner gas. There are 5 illustrations, 2 tables, and a 7-entry bibliography.

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USSR

UDC 669.71.018.9.4

GOGIN, V. B., MAKAROV, G. S., MITVOL', L. S., MITIN, V. P.

"Some Problems of Processing a Melt of Aluminum Alloys in a Vacuum"

Metalloved. splavov legkikh met. -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 87-91 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G204)

Translation: Results are presented from degassing alloys based on aluminum in a six-ton vacuum mixer. Mixing the liquid bath during the evacuation process reduces the H content in the melt. It is necessary to select the vacuum treatment parameters beginning with the presence of volatile components in the alloys. There are 5 illustrations, 2 tables, and a 6-entry bibliography.

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Analysis and Testing

USSR

UDC 669.716:621.745.55:66.067

ANDREYEV, A. D., MAKAROV, G. S., and GOGIN, V. B.

"Analysis of Some Regularities of the Degassing Process of a Melt by Its Blowing Through With an Inert Gas"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 72-80, resume

Translation: A kinetic equation has been developed which characterizes the degassing process by blowing through a melt with an inert gas. The effect of various factors on degassing is discussed. It is demonstrated that the efficiency of using an inert gas by blowing a melt through tubes in a reverberating furnace is not great. It can be increased by size reduction of bubbles of the inert gas and creation of conditions providing a contact of the whole melt mass with the inert gas. Five figures, two tables, seven bibliographic references.

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USSR

UDC 669.716:621.745.55:66.067

GOGIN, V. B., MAKAROV, G. S., MITVOL', L. S., and MITIN, V. P.

"Some Problems in the Vacuum Processing of the Melt of Aluminum Alloys"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 87-91, resume

Translation: Results of degassing aluminum alloys in a vacuum holding furnace of 6 tons capacity are presented. It was found that mixing the liquid bath in the vacuum evaporation process decreases the hydrogen content in the melt. It is demonstrated that the selection of the parameters of vacuum processing must be made proceeding from the presence of highly volatile components in the alloys. Five figures, two tables, six bibliographic references.

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INCREASE IN THE PHYSICOMECHANICAL PROPERTIES OF CONCRETE HARDENING
AT SUBZERO TEMPERATURES -U-
AUTHOR--(05)-GORBONDS, YE.P., GOGIN, V.F., KONKIN, A.P., GORBONDS, A.D.,
RATINOV, V.B.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 267,425
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CONCRETE, COLD HARDENING, LOW TEMPERATURE EFFECT, CALCIUM
COMPOUND, PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1415

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128814

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AA0128814

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYSICOMECH. PROPERTIES OF COLD CONCRETE WERE INCREASED BY INTRODUCING COMPLEX ADDITIVES INTO THE CONCRETE MIXT. TO SPEED UP THE HARDENING OF CONCRETE AT MINUS 25DEGREES AND COMBINED WITH THE THERMOS METHOD AT MINUS 50DEGREES, A MIXT. OF CACL SUB2 AND CA NITRITE NITRATE 7-25PERCENT ON THE WT. OF THE MIXING WATER WAS USED FOR THE ADDITIVE.

UNCLASSIFIED

USSR

UDC 621.395.74.01

GOGIN, YU. A., VALENTOV, V.A.

"Determination Of The Routes For Information Transmission In Communication Networks"

Sb. nauchn. tr. TsNII Svyazi. Leningr. fil. (Collection Of Scientific Works Of The Central Scientific-Research Institute Of Communications. Leningrad Branch), 1970, Issue 5, pp 68-73 (from RZh--Elektrosvyaz', No 2, February 1971, Abstract No 2.64.33)

Translation: A method is considered for determining the routes for information transmission between given junction points of complex communication networks, based on the formulation and solution of a system of logical equations. The proposed method makes it possible to determine the minimum route for information transmission of any choice, and also the route with a given rank with given limitations on the switching possibilities of the junction points of the net. Determination of the routes for information transmission in complex communication networks with the aid of logical equations makes it possible to find the probability of connectivity between given junctions points of the network. 2 ill. 10 ref. O.N.

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USSR

UDC: 681.3.06:51

VOROB'YEV, V. M., GOGINA, M. A., KONONENKO, I. A., and CHISTOV, V. P.

"Programming System of the Extended FORTRAN Language for the BESM-8 Computer"

Sb. nauch. tr. Chelyabinsk. politekhn. in-ta (Collection of Scientific Works of the Chelyabinsk Polytechnical Institute) No 138, 1973, pp 93-98 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B151)

Translation: The purpose of extending the FORTRAN language was to create a non-machine-oriented language for recording algorithms of symbolic and digital information permitting the use of a language translator in all machines with a minimum of construction. It was also proposed to provide a succession of algorithms written in the LYaPAS language and an absorption of the broadened language by languages of higher level -- the PL/I language, for example.

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VOROB'YEV, V. M., et al., Sb. nauch. tr. Chelyabinsk. politekhn. in-ta,
No 138, 1973, pp 93-98

This last language could not be fully realized due to a number of syntactical and semantic contradictions in the FORTRAN and LYAPAS languages. It is noted that the essential characteristic of the extended language is the possibility of using it in operands of "lines of symbols" and "lines of bits" of arbitrary length. This required taking special measures for considering the effect of changes in the operand length of the computation process.

In a version in which the length of the operands may be equal to the length of the machine word there is no need for this consideration, and the translated programs are done faster. Compound names used for the formation of "cut-ins" and "cut-outs" and "lines of bits" and "lines of symbols" are introduced into the extended language. The principles for the construction of the translator and for the translation of R text into F text are given. Organization of the translation system is described. N. V.

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USSR

UDC 51:155.001.57:681.3.06

GOGINOV, V. I., FASTOVETS, N. O., KHURGIN, Ya. I.

"Practice of Application of Teaching Programs for Processing of Multivariant Files of Experimental Data"

Tr. Mezhdunar. Simpoziuma po Tekhn. i Biol. Probl. upr., 1968. Raspoznavaniye Obrazov. Adaptivn. Sistemy [Works of International Symposium on Technical and Biological Control Problems, 1968. Pattern Recognition. Adaptive Systems], Moscow, Nauka Press, 1971, pp 106-111, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971; Abstract No 10 V825 by the author's).

Translation: In solving specific problems of medical diagnosis, problems of functional description and prediction in geophysics and problems of identification of complex industrial objects, a long series of experiments was performed on the BESM-3M and M-220 computers. Processing of experimental results was performed using algorithms and programs developed at the laboratory of applied mathematics of the Moscow Institute of the Petrochemical and Gas Industry imeni I. M. Gubkin. The algorithms used allow: a) design of optimal, in some sense, rules in problems of regression and pattern recognition; b) use of additional information such as human estimation of the reliability of experimental data in problems of pattern recognition; c) automatic normalization of the decision rule to a scale convenient for human perception.

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USSR

GOGISH, L. V., STEPANOV, G. Yu.

"Quasi-univariate Theory of Interaction of a Turbulent Wake with a Supersonic Flow in a Channel and a Jet"

Nauch. Tr. In-t Mekh. Mosk. Un-ta, [Scientific Works of the Institute of Mechanics, Moscow University], 1971, No 11, pp 18-34. (Translated from Referativnyy Zhurnal Mekhanika, No 1, 1972, Abstract No 1B426 by the authors).

Translation: An approximate integral method is described for calculation of the interaction of a flat and axisymmetrical turbulent wake with a stream in a channel or jet, consisting of integration of a system of ordinary first order differential equations, two of which describe the flow in a single-parameter turbulent wake, while the others describe the flow in a univariate or quasi-univariate supersonic nonviscous flow (jet). The course of the interaction is fully or partially described by a special solution of this system, passing through a singular point corresponding to the constricted cross-section (throat) or the viscous layer. The flat flow in the near wake behind the edge of a plate, around which a limitless supersonic stream and a stream of limited transverse size flow are studied as applications, as well as the flow in a pseudojump in a channel of constant width. One empirical constant is used in the law of friction (common for all flows studied Mach numbers $M=1.5-4$), and the results of calculation agree satisfactorily with independent experimental data.

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USSR

UDC 511

GOGISHVILI, G. P.

"On the Quantity of Number Representations by Positive Quaternary, Diagonal Quadratic Forms"

Tr. Tbilis. mat. in-ta. AN GruzSSR (Works of Tbilisi Mathematics Institute, Academy of Sciences Georgian SSR), 1971, 40, pp 59-105 (summary in Georgian) (from RZh-Mathematika, No 2, Feb 72, Abstract No 2A177 by A. MALYSHEV)

Translation: Formulas are obtained for the quantity of number representations by the forms $\{a_1, a_2, a_3, a_4\} = a_1 x_1^2 + a_2 x_2^2 + a_3 x_3^2 + a_4 x_4^2$ in the cases $\{1, 1, 16, 32\}$, $\{1, 3, 36, 36\}$, $\{1, 4, 9, 36\}$, $\{1, 8, 8, 32\}$, $\{1, 12, 36, 36\}$, $\{1, 16, 16, 32\}$. A preliminary study is made of a singular series of the form $\{a_1, a_2, a_3, a_4\}$ for arbitrary whole positive numbers

a_1, a_2, a_3, a_4 .
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[REDACTED] SOVIET UNION

GOGITIDZE, O. A., Scientific Research Institut for Stable Isotopes (Nauchno-Issledovatel'skii Institut po Stabil'nim Izotopam), Tbilisi, USSR.

East Berlin, Kernenergie, Vol 14, No 3, Mar 1971, pp 87-89.

Abstract: [Russian article; author's English summary, modified] A new method for determining the ^{10}B content of boron-containing compounds, based on measuring the attenuation of the thermal neutron flux that penetrates the volume with the substance being analyzed was described. The technique is based on the difference of effective thermal neutron capture cross section of the isotopes ^{10}B and ^{11}B ; it was used to determine the ^{10}B concentration in liquid and gaseous compounds containing boron. The principle of the apparatus used was described. It permits the determination of ^{10}B concentrations in $(\text{CH}_3)_2\text{BF}_3$ in the 5 to 95 atomic-percent concentration range at an error of $\pm 0.25\%$ to $\pm 0.5\%$ over the concentration range. Four references, including 1 German, 2 Russian, and 1 Western. (Manuscript received 24 Jun 1970).

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Pathology

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USSR

UDC 616.981.553-092.9

MATKOVSKIY, V. S., TSYBULYAK, G. N., ZUBIK, T. M., ZHUK, L. N., AKIMOV, G. A., GAREMIN, Ye. M., GOGLOZHA, R. L., KUSTOV, N. A., PASHKOVSKIY, E. V., and TIMOFEYEV, V. V., Chair of Infectious Diseases, Chair of Military Field Surgery, and Chair of Nervous Diseases, Military Medical Academy imeni S. M. Kirov, Leningrad

"The Pathophysiology of Experimental Botulism"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 16-19

Abstract: A study was carried out of the disturbance of external respiration, gas content and acid-base state of blood, and of hemodynamic shifts with severe experimental intoxication with botulinus toxin. Fifty dogs were intoxicated with type A botulinus toxin. At the time of administration and at the peak of intoxication, the gas content of arterial and venous blood, hemoglobin, hematocrit, specific weight of blood and plasma, and content of sodium, potassium, lactic and pyruvic acid were determined. External respiration was studied by means of a type T35 spirometabolograph and circulation by the modified mechanical cardiographic method. Biocurrents of the cerebral cortex were recorded on a four-channel electroencephalograph. At the peak of

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MATKOVSKIY, V. S., et al, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 3, 1971, pp 16-19

intoxication, a reduction of per minute respiration with a resulting lowered level of oxyhemoglobin in arterial blood, and respiratory acidosis were noted. EKG data revealed predominantly hypoxic shifts in the myocardium, and the EEG data -- inhibitory processes in the cerebral cortex. Intensified cardiac activity served as a compensatory mechanism for respiratory insufficiency. The secondary shifts in the function of organs and systems in connection with disturbances of a metabolic and functional nature played a vital role in the pathogenesis of botulinus intoxication. Morphological shifts in the CNS were apparently caused largely by disturbances in the microcirculation and were reversible. In treating severe botulinus intoxication, special attention should be paid to timely correction of external respiratory insufficiency, with artificial ventilation of lungs most expedient.

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USSR

UDC 611.852.2-018+616.282.2-001.34-091

GOGNIASHVILI, O. Sh., Candidate of Biological Sciences, Problem Laboratory of Experimental and Clinical Audiology, Tbilisi Institute for the Advanced Training of Physicians

"Ultrastructure of Normal Cochlear Spiral Organ and Following Experimental Sonic Trauma"

Moscow, Vestnik Otorinolaringologii, No 5, 1973, pp 58-63

Abstract: Male and female guinea pigs (250-350 g) were exposed to 135 db intensity sound for 30 minutes, following which the animals were decapitated and electron micrographs were made of their cochlear spiral canals. The results showed that sonic trauma damaged primarily the outer hair cells: one or two additional Henson bodies appeared, osmiophilic bodies appeared in the upper portions of the cells, and at this level membranes invaginated into the cells. The nuclear dimensions of the outer hair cells increased, the nucleus moved either to the basal portion of the cell or the upper portion, and the nucleolar material moved to the periphery of the nucleus. The inner hair cells showed an additional layer of the smooth membrane.

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USSR

UDC 621.373.521.1:621.382.233

BOBROVSKIY, YU. L., GOGOBERIDZE, G. B., KOVALEVA, D. I.

"Synchronizing a Superhigh Frequency Tunnel Diode Generator"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi.
Vyp. 2 (Materials of the Scientific and Technical Conference. Leningrad
Electrotechnical Communications Institute. Vyp. 2), Leningrad, 1970, pp
204-207 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D262)

Translation: Two versions of the circuit for synchronizing a superhigh frequency tunnel diode generator are investigated. Practical recommendations with respect to utilization of each of the schemes are confirmed by the results of an experimental study.

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USSR

UDC 621.397.61

SALNIKOV, A. P., GOGOL, A. A.

"Test Signal Generator of a Measuring Video Control Unit"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 3
(Materials of the Scientific and Technical Conference. Leningrad Electrotechnical
Communications Institute. Vyp. 3), Leningrad, 1970, pp 7-10 (from RZh-Radiotekhnika,
No 8, Aug 70, Abstract No 8G153)

Translation: This article contains an investigation of methods of shaping step
voltages. The block diagram and schematics of a test signal generator which
shapes ten-step and three-step signals to control the light-signal conversion
characteristic is presented.

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1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MECHANICALLY STRONG CATALYSTS FOR LIQUID PHASE HYDROGENATION -U-

AUTHOR--(05)-SOKOLSKIY, D.V., ZHUBANOV, K.A., SHUMATEVA, N.F., GOGOL, N.A.,
KRUPENYA, N.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,354

REFERENCE--OTKRYTIYA, IZJBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST, HYDROGENATION, CHEMICAL PATENT, GYPSUM, MECHANICAL
PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3007/0827

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136261

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0136261

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MECH. STABLE CATALYSTS ARE PREPD.

BY ADDING A GYPSUM BINDER TO THE CATALYST. FACILITY: INSTITUT

KHIMICHESKIKH NAUK AN KAZAKHSKOY SSR.

UNCLASSIFIED

172 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--PREPARATION OF A MECHANICALLY STRONG, LIQUID PHASE HYDROGENATION
CATALYST -U-
AUTHOR-(03)-SGKOLSKIY, D.V., GOGOL, N.A., PIPKO, G.N.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,735
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, CALCIUM SULFATE, CATALYTIC HYDROGENATION,
CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRADE--3004/1793

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0132059

UNCLASSIFIED

2/2 010
CIRC ACCESSION NO--AA0132059

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A MECH. STRONG LIQ. PHASE
HYDROGENATION CATALYST WAS OBTAINED BY ADDING A BINDER, SUCH AS CASO
SUB4, TO THE CATALYTIC MASS BY CUPPTG. IT WITH A CARRIER AND AN ACTIVE
PHASE. FACILITY: INSTITUTE OF CHEMICAL SCIENCES; ACADEMY OF
SCIENCES, KAZAKH S.S.R.

UNCLASSIFIED

USSR

UDC: 681.3.02

RUKHADZE, A. K., ABDUSHELISHVILI, G. T., GOGOLADZE, O. V.

"System of Commands for a Compact Control Computer"

Tr. Gruz. politekhn. in-t (Works of Georgian Polytechnical Institute),
1970, No 4(139), pp 101-109 (from RZh-Matematika, No 11, Nov 71, Abstract
No 11V777)

Translation: A system of commands is presented for the small M-1000
control computer being developed at the Tbilisi Scientific Research In-
stitute of Instrument Building and Automation Facilities. It is noted
that the M-1000 can play the part of a channel in an aggregate system of
computer facilities or can be used separately as a small control com-
puter. V. Mikheyev.

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USSR

UDC: 681.3.02

RUKHADZE, A. K., ABDUSHELISHVILI, G. T., ~~GOGOLADZE, O. V.~~

"A System of Commands for a Compact Controller"

Tr. Gruz. politekhn. in-t (Works of the Georgian Polytechnical Institute),
1970, No 4(139), pp 101-109 (from RZh-Kibernetika, No 11, Nov 71, Abstract
No 11V777)

Translation: The paper presents a system of commands for the M-1000
miniature control computer. The system was developed at the Tbilisi
Scientific Research Institute of Instrument Building and Means of Auto-
mation. It is noted that the M-1000 may act as a channel in an aggregate
system of computer facilities, while it may be used separately as a minia-
ture controller. V. Mikheyev.

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1/2 026 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTRIC MODELS FOR STUDYING THE INFLUENCE OF HEAT REMOVAL ON THE
DYNAMIC ERRORS OF TEMPERATURE SENSORS OF FINITE DIMENSIONS -U-
AUTHOR-(02)-DALAKISHVILI, O.N., GOGOLADZE, Z.Z.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK GRUZINSKOI SSK, SOOBSHCHENIIA, VOL. 57, JAN. 1970,
P. 153-156
DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT, PHYSICS

TOPIC TAGS--ELECTRIC ANALOG, ERROR ANALYSIS, TEMPERATURE MEASURING
INSTRUMENT, HEAT LOSS, FREQUENCY CHARACTERISTIC, MODEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1452

STEP NO--UR/0251/70/057/000/0153/0156

CIRC ACCESSION NO--AP0118441

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118441

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF DYNAMIC ERRORS INVOLVED IN TEMPERATURE MEASUREMENTS, WITH THE AID OF THE ELECTRIC MODEL OF A CYLINDRICAL TEMPERATURE SENSOR. IT IS SHOWN THAT HEAT REMOVAL CAN LEAD TO SUBSTANTIAL ERRORS WHEN THE DEPTH OF IMMERSION OF THE SENSOR IS LESS THAN 0.4 OF ITS LENGTH. AT FREQUENCIES ABOVE 40 HZ AND IMMERSION DEPTHS GREATER THAN 0.4 OF THE SENSOR LENGTH, THE ERRORS DUE TO HEAT REMOVAL ARE NEGLIGIBLE. IT IS SHOWN THAT BY USING ELECTRIC MODELS OF TEMPERATURE SENSORS, IT IS POSSIBLE TO STUDY COMPLEX PROBLEMS ASSOCIATED WITH THE ASSESSMENT OF DYNAMIC ERRORS INVOLVED IN THE MEASUREMENT OF UNSTEADY TEMPERATURES, AND THEREBY TO IMPROVE THE ACCURACY OF THE MEASUREMENT RESULTS. FACILITY: VSESIOUZYNI
NAUCHNO-ISSLEDOVATEL'SKII INSTITUT METROLOGII, TIFLIS, GEORGIAN SSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--300670
TITLE--TOTAL REPLACEMENT OF THE THORACIC SEGMENT OF THE OESOPHAGUS WITH A
PLASTIC PROSTHESIS IN EXPERIMENT -U-
AUTHOR--GOGOLASHVILI, G.D.

COUNTRY OF INFO--USSR

SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 3, PP
15-19
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, THORACIC SURGERY, PROSTHESIS,
PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0923

STEP NO--UR/0481/70/000/003/0015/0019

CIRC ACCESSION NO--AP0126582

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0126582
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR TESTED THE POSSIBILITY
OF A NEW METHOD OF ALLOPLASTY OF THE CESOPHAGUS IN WHICH THE PROSTHESIS
WAS PLACED INTO AN ASEPTIC MEDIUM. THE ENTIRE THORACIC SEGMENT OF THE
OESOPHAGUS WAS REPLACED. FACILITY: KHIRURGICHESKOYE OTDELENIYA
TSALENDZHIKHSKUY BOL'NITSY GRUZINSKOY SSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--GEOMETRIC FORM OF PRESSURE VALVE PARTS -U-
AUTHOR--(02)-ANTIPOV, V.V., GOGOLEV, B.A. 6
COUNTRY OF INFO--USSR
SOURCE--TR. SARATOVSK. IN-TA MEKHANIZ. S. KH. (TRANSACTIONS OF THE SARATOV
REFERENCE--REFERATIVNYY ZHURNAL-DVIGATELI VNUTRENNEGU SGORANIYA, NO 4,
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--HIGH PRESSURE VALVE, WEAR RESISTANCE, GEOMETRIC FORM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO---FD70/005031/E12 STEP NO--UR/0000/70/000/042/0037/0042
CIRC ACCESSION NO--AR0141930
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE---11DEC70

CIRC ACCESSION NO--AR0141980

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PARTS OF THE PRESSURE VALVE BUILT BY THE NZTA (EXPANSION UNKNOWN) ARE PRODUCED WITH DEVIATIONS FROM TECHNICAL CONDITIONS (EXCESS OF TAPER AND ELLIPTICALITY OF MAIN WORKING SURFACES). 50PERCENT OF VALVE PAIRS ARE MANUFACTURED WITH INCREASED GAPS, EXCEEDING ALLOWABLE TECHNICAL CONDITIONS. AS A RESULT OF WEAR ON PRESSURE VALVE PARTS, THE GAP AT THE BY PASS RELIEF SHOULDER IS INCREASED TO 0.048 MM AND THEIR MACROGEOMETRY IS SEVERELY DISTORTED. USE OF THE LATEST EQUIPMENT, INTRODUCTION OF PROGRESSIVE TECHNOLOGICAL PROCESSES, AND UPGRADING OF PRODUCTION ATTITUDES WILL MEAN MUCH IMPROVEMENT IN QUALITY OF PRECISION PARTS.

UNCLASSIFIED

Veterinary Medicine

USSR

UDC 619:576.858.4:578.083

LEBEDEV, A. I., GOGOLEV, M. M., MUTUZKIN, L. I., and MUTUZKINA, Z. P., All-Union Institute of Experimental Veterinary Medicine

"Specific Resistance of Cells Induced by Foot-and-Mouth Disease Virus"

Moscow, Veterinariya, No 1, 1972, pp 31-33

Abstract: Guinea pig kidney cells obtained from animals that recovered from foot-and-mouth disease and transplanted cells (sheep kidney fetal pig kidney, hamster kidney) that survived infection with different foot-and-mouth disease virus strains yielded subcultures which after 11 passages remained completely resistant to the homologous A₂₂ virus. Bioassays on laboratory animals and in tissue culture failed to reveal the presence of virus in the cells, i.e., the acquired resistance was not accompanied by the virus carrier state. The cells' resistance proved to be specific. It was manifested only to the homologous A₂₂ variant, whereas another variant of the virus, A₇ and type O, reproduced actively; the titer did not differ from that of virus grown in the control culture. However, the cells remained sensitive to heterologous types and variants of the virus.

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USSR

UDC 619:576.858.4:578.083

GOGOLEV, V. V.

Data Processing

613445 55354
6 Nov 1978

61344

SYNTHESIS OF DATA REPRESENTATION SYSTEMS AS A LINGUISTIC PROBLEM

[Article by A. G. Gogolev, V. V. Gogolev, Moscow, U.S.S.R., in: *Journal of Applied Mathematics and Mechanics*, 1978, Vol. 42, No. 1, pp. 48-49.]

The development of modern systems for the control of production, transportation and communication, for planning and control, research, training and data processing with time monitoring and for optimization and control applications has led to the occurrence of the problem of interaction between man and machine -- the problem of planning and designing data representation systems [1]. At this time, data representation systems are being developed separately to a significant extent, with regard to methods of application with insufficient utilization of united mathematical methods and models.

The purpose of this report is to formulate principles, give basic definitions and classifications, and, finally, to note a possible frame of synthesizing data representation systems. The details pertaining to individual aspects of the synthesis are contained in the papers by the authors indicated in the bibliography.

It is expedient to use the following basic principles as the basis for synthesizing data representation systems:

- 1) Along with the display equipment, the data representation systems include algorithms and programs which provide for the representation of the data, and also people-making decisions and functioning them on the basis of the system. This approach differs theoretically from that adopted in existing systems, whereby data representation and people are not connected part of the system but part of the external environment directly connected with the data representation system [2].
- 2) The development of the data representation system is considered as the language of exchange between man and machine during the process of solving the problem. The synthesis problem reduces to constructing the optimal exchange language [3].

USSR

UDC: 8.74

GOGOLEVSKIY, V. B.

"On the Reliability of Standby Equipment With Monitoring and Switching Devices"

V sb. Osnovn. vopr. teorii i praktiki nadezhnosti (Basic Problems in the Theory and Practice of Reliability--collection of works), Moscow, "Sov. radio", 1971, pp 149-155 (from EZh-Kibernetika, No 1, Jan 72, Abstract No 1V1028)

Translation: Formulas are derived for determining the probabilities of no-failure operation of standby equipment which incorporates monitoring and switching devices. Account is taken of the possibility of failures in these devices, and their effect on the operational reliability of the equipment. Author's resumé.

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- 46 -

172-025 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--HEAT TRANSFER DURING THE BOILING OF FREON 21 UNDER FREE CONVECTION
CONDITIONS -U-
AUTHOR--GOGONIN, I.I. G
COUNTRY OF INFO--USSR
SOURCE--KHOLOD. TEK. 1970, 47(3), 24-8
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS
TOPIC TAGS--FREON, HEAT TRANSFER COEFFICIENT, BOILING

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0871 STEP NO--UR/0066/70/047/003/0024/0028
CIRC ACCESSION NO--AP0137899
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137899

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEAT TRANSFER COEFF. FOR BOILING
FREON 21 WAS DETD. FOR THE TEMP. RANGE OF 20-160DEGREES AND HEAT FLUXES
CORRESPONDING TO THE TRANSITION CONVECTION TO BOILING. HYSTERESIS OF
THE HEAT TRANSFER COEFFS. WAS OBSERVED DURING THIS TRANSITION ON
DECREASING OR INCREASING HEAT FLUX. EXPTL. RESULTS WERE FITTED BEST
WITH THE EQUATION OF G. N. DANILOVA AND A. V. KUPRIJANOVA (1967).
FACILITY: INST. TEPLOFIZ., NOVOSIBIRSK, USSR.

UNCLASSIFIED

Acc. Nr:

13
#0046556

Raf. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya
Biologicheskaya, 1970, Nr 1, pp 139-142

Gogorikidze, N. I.

NITROGEN FIXATING BACTERIA RELATED TO BEIJERINCKIA
-- GENUS FOUND IN THE GEORGIAN SOILS

*All Union Tea Research Institute of Subtropic Cultures Research,
Georgian SSR, Anasauli; Timiryazev Agricultural Academy, Moscow*

On the basis of examining their morphological and physiological features 25 strains of Beijerinckia isolated from soils of Georgia were found to belong to Beijerinckia indica Derx (strains of the 1st group) and to Beijerinckia derxii Toham (strains of the 11nd group) types.

It was shown that Beijerinckia 1st and 11nd groups strains display high nitrogen fixating activity. These strains fixate from 14 to 20 mg of nitrogen per 1 g of consumed sugar. A pronounced resistance of Beijerinckia strains to an increased contents of aluminum in the medium was also established.

REEL/FRAME

19761819

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THERMOCHROMIC PROPERTY OF AN AQUO-TETRACHLORO COMPLEX OF COBALT -U-
AUTHOR--(03)-GEGORISHVILI, P.V., GOGORISHVILI, D.A., ZEDELASHVILI, YE.N.
COUNTRY OF INFO--USSR
SOURCE--SOBESHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 61-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COBALT COMPLEX, CRYSTAL, THERMAL EFFECT, COLOR, CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1235 STEP NO--UR/0251/70/057/001/0061/0063
CIRC ACCESSION NO--AP0128651
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0129651

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLN. OF GUANADINE HYDROCHLORIDE AND COCL SUB2.6H SUB2 O IN A 2:1 MOLAR RATIO WAS EVAPD. ON A H SUB2 O BATH, WASHED WITH ET SUB2 O, DRIED, AND SEALED IN AMPULS. THE CRYSTALS WERE PINK AT SMALLER THAN 30-5DEGREES AND BLUE AT GREATER THAN 30-5DEGREES. THE PROCESS WAS REVERSIBLE. THE FORMULA OF THE PINK FORM WAS (GUH) SUB2 COCL SUB4.5H SUB2 O, WHERE FUH IS CN SUB3 H SUB6 PRIME POSITIVE. DRYING IT OVER CONCD. H SUB2 SO SUB4, LOSS IN WT. 23.43PERCENT, GAVE THE BLUE FORM. IN VACUO THE BLUE FORM LOST ITS REVERSIBILITY. BUT EXPOSURE TO H SUB2 O VAPOR RESTORED THE PINK FORM AND THE THERMOCHROMIC CHARACTERISTIC. AT 30DEGREES THERE IS NO LOSS IN WT. BUT THE CRYSTALS ARE BLUE. AT 69DEGREES 3 MOLS. OF H SUB2 O WERE DRIVEN OFF. APPARENTLY AN INTERMEDIATE COMPD., (GUH) SUB2 (COCL SUB4 (2H SUB2 O)).3H SUB2 O, IS FORMED. FACILITY: INST. FIZ. ORG. KHIM., TBILISI, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--THERMOCHROMIC PROPERTY OF AN AQUO-TETRACHLORO COMPLEX OF COBALT -U-
AUTHOR--(03)-GCGGRISHVILI, P.V., GCGGRISHVILI, D.A., ZEDELASHVILI, YE.N.
COUNTRY OF INFO--USSR
SOURCE--SOBESHCH. AKAD. NAUK GRUZ. SSR 1970, 57(1), 61-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--COBALT COMPLEX, CRYSTAL, THERMAL EFFECT, COLOR, CHLORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1235 STEP NO--UR/0251/70/057/001/0061/0063
CIRC ACCESSION NO--AP0128651
UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--20NOV70
 CIRC ACCESSION NO--AP0129651
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SOLN. OF GUANADINE HYDROCHLORIDE
 AND COCL SUB2.6H SUB2 O IN A 2:1 MOLAR RATIO WAS EVAPD. ON A H SUB2 O
 BATH, WASHED WITH ET SUB2 O, DRIED, AND SEALED IN AMPULS. THE CRYSTALS
 WERE PINK AT SMALLER THAN 30-5DEGREES AND BLUE AT GREATER THAN
 30-5DEGREES. THE PROCESS WAS REVERSIBLE. THE FORMULA OF THE PINK FORM
 WAS (GUH) SUB2 COCL SUB4.5H SUB2 O, WHERE FUH IS CN SUB3 H SUB6 PRIME
 POSITIVE. DRYING IT OVER CONCD. H SUB2 SO SUB4, LOSS IN WT.
 23.43PERCENT, GAVE THE BLUE FORM. IN VACUO THE BLUE FORM LOST ITS
 REVERSIBILITY. BUT EXPOSURE TO H SUB2 O VAPOR RESTORED THE PINK FORM
 AND THE THERMOCHROMIC CHARACTERISTIC. AT 30DEGREES THERE IS NO LOSS IN
 WT. BUT THE CRYSTALS ARE BLUE. AT 69DEGREES 3 MOLS. OF H SUB2 O WERE
 DRIVEN OFF. APPARENTLY AN INTERMEDIATE COMPD., (GUH) SUB2 (COCL SUB4
 (2H SUB2 O)).3H SUB2 O, IS FORMED. FACILITY: INST. FIZ. ORG.
 KHIM., TBILISI, USSR.

UNCLASSIFIED

GOGOSOV, V. V.

SPRS 60634
87 November 1973

SOME PROBLEMS OF THE ELECTROHYDRODYNAMICS OF MULTIPHASE MEDIA

Abstract of a Paper by V. V. Gogosov, N. I. Pavlov Given at the Nukleohydrodynamic Conference, pp 237-239

The equations of motion of the multiphase medium (a gas (or liquid) charged drops (or solid particles) and free ions) are written in the electrohydrodynamic approximation. Using the principles of thermodynamics of nonequilibrium processes in the case of weak deviation from equilibrium, formulas are derived for the frictional force, the heat flux in the gas phase, the exchange of energy between the components and the evaporation and condensation rates of the drops.

Procedures are proposed for simplifying the system of equations obtained. Various forms of Ohm's law were obtained for drops in a multiphase medium. A simple formula was derived for calculating the phase temperature difference. It is demonstrated that Ohm's law for drops differs from the corresponding expression in ordinary electrodynamics: the relation of the current density to the velocity of the medium and the electric field is nonlinear.

The "freezing" integral for the liquid phase which is valid for the case where the gas and liquid phase rates coincide was obtained. A study was made of the problem of uniform, stationary flow with a complex Ohm's law for the liquid phase. It is demonstrated that when the electric field can be considered constant, the solution of the problem reduces to solving the corresponding problem in ordinary electrodynamics by the introduction of new notation.

The system of relations is written out for the discontinuity in the two-phase medium made up of gas and charged drops using the complex Ohm's law. The discontinuity classification is proposed. It is demonstrated that in order to determine the parameters behind the shock wave front it is insufficient to give the values of these parameters in front of the discontinuity and the propagation rate of the discontinuity. The intensity of the surface charge at the discontinuity and the magnitude of the normal component of the electric field behind the discontinuity front connected with it remain undefined in this case. The required equations are written out which close the system of relations for the shock wave front. Just as in ordinary electrodynamics, the form of these formulas depends on the magnitude of the velocity normal to the discontinuity

USSR

UDC 533.951

GOGOSOV, V. V. and POLYANSKIY, V. A.

"Weak Waves, Characteristics, and the Problem of Flow Past a Thin Profile in Electrohydrodynamics"

Moscow, Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza, No 3, 1972, pp 137-146

Abstract: An investigation is made of the propagation of weak waves, in electrohydrodynamics, with respect to an inhomogeneous unperturbed state. Consideration is given to waves with a wavelength smaller than the size of the inhomogeneities. Change of amplitudes of the wave at lengths comparable to the wavelength is disregarded. A detailed analysis is given of the dispersion equation in the cases where the wave propagates only on the basis of ions, while the neutrals are at rest, when the flow is isentropic (the mobility coefficient $b = 0$) and when the mobility coefficient $b \neq 0$. It is shown that in the electrohydrodynamic formulation, two phase velocities of the propagation of small perturbations exists in a medium that on the whole is quiescent,

$$u_0 = \pm a_0, u_1 = bE_0.$$

1/2

USSR

GOGOSOV, V. V. and POLYANSKIY, V. A., Izvestiya Akademii Nauk, SSSR, Mekhanika Zhidkosti i Gaza, No 3, 1972, pp 137-146

Phase velocity u_0 is the conventional velocity of sound in gas dynamics, velocity u_1 coincides with the velocity of the ion component. In waves propagating at velocity u_1 , generally speaking the charge density and the electrical field change, while waves propagating at velocity u_0 , the gas-dynamic parameters of the medium also change. Consideration is given to the propagation of high-frequency waves, for which the general equation system of electrohydrodynamics is inapplicable and it is necessary to use the complete system of Maxwell equations. An investigation is made of the characteristics of the electrohydrodynamics equations; the problem of flow by an electrohydrodynamic flux is discussed. It is shown that with a specific direction and intensity of the electrical field, perturbations from the profile can propagate upstream along a supersonic flux. 8 references.

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USSR

GOGOSOV, V. V., POLYANSKIY, V. A., Moscow

"Discontinuity in Magnetohydrodynamics"

Moscow, Prikladnaya matematika i mekhanika, No. 5, Sep/Oct 71, pp 761-772

Abstract: A system of relationships at a discontinuity in electrohydrodynamics, when the dielectric and magnetic permeabilities of the medium are equal to unity, is investigated. Relationships describing the gasdynamic and electromagnetic characteristics on different sides of a discontinuity surface were previously described by Sedov (Mekhanika sploshnoy sredy, Vol. 1, Moscow, "Nauka", 1970). It is shown that it is not sufficient to assign the values of all parameters before the discontinuity and the rate of the propagation of the discontinuity in order to determine the parameters behind the shock wave front, since the intensity of the accumulated surface charge σ at the discontinuity and the associated value of the normal component of the electric field E_{n2} behind the discontinuity front remain indeterminate. The required relationships closing the system of equations at the shock wave front are written from an analysis of the wave structure. The form of these formulas and consequently

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- 62 -

USSR

UDC 666.76:539.56

PISARENKO, G. S. and GOGOTSI, G. A., Institute of Problems of Strength, Academy of Sciences, Ukrainian SSR

"The Question of Evaluating the Brittleness of Refractory Materials"

Moscow, *Ogneupory* , No 2, Feb 74, pp 44-47

Abstract: The authors have devoted this article to discussing the question of the behavior of brittle refractory materials under a load. They make an attempt to classify the deformation diagrams of brittle materials and suggest the characteristics for evaluating their brittleness which are equal to the ratio of the elastic deformations to the total deformations measured at the moment of fracturing of the sample. The reason for the article is the lack of sufficient information on the tensile strengths under bending or compression, the moduli of elasticity, and the Poisson coefficients of refractory materials or other brittle materials intended for use as structural elements. The article contains 4 illustrations and 10 bibliographic references.

1/1

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1/2 033

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--INVESTIGATION OF THE DESTRUCTION OF ALUMINOSILICATE REFRACTORIES
WHICH CONTAIN BORON NITRIDE -U-

AUTHOR-(04)-GOGOTSI, G.A., KURIAT, R.I., TEREKHOVSKIY, B.I., TRESVYATSKIY,
S.G.

COUNTRY OF INFO--USSR

SOURCE--KIEV, PROBLEMY PROCHNOSTI, NO 3, MAR 70, PP 47-50

DATE PUBLISHED----MAR70

G

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CRACK PROPAGATION, STRESS LOAD, THERMAL STRESS, REFRACTORY
MATERIAL, ALUMINUM SILICATE, BORON NITRIDE, CORUNDUM, CLAY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0854

STEP NO--UR/3663/70/000/003/0047/0050

CIRC ACCESSION NO--AP0116366

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SPECIMENS OF COMPLEX ALUMINOSILICATES CONTAINING BORON NITRIDE WERE STUDIED UNDER THERMAL LOADING CONDITIONS UP TO 2,500DEGREESC TO DETERMINE THE CHARACTERISTICS OF CRACK FORMATION AND DESTRUCTION OF THESE REFRACTORY MATERIALS. TO REGISTER THE TEMPERATURE DURING TESTING, SPECIAL THERMOMETRIC SPECIMENS WITH BUILT IN THERMOCOUPLES WERE MADE. THE TIMES OF FRACTURE WERE DETERMINED BY CURRENT CONDUCTING PICKUPS. IT WAS FOUND THAT COMPOSITIONS CONTAINING 40-50PERCENT BORON NITRIDE ARE MOST RESISTANT TO THERMAL LOADING. WHEN THE BORON NITRIDE CONCENTRATION WAS HIGH (60PERCENT OR MORE) THE FRACTURE OF THE CYLINDRICAL SPECIMENS WAS CHARACTERIZED BY BOTH RADIAL AND ANNULAR CRACKS. ANALYSIS OF THE FRACTURED SURFACES REVEALED THAT THE ABILITY OF THESE MATERIALS TO WITHSTAND THERMAL LOADING DEPENDS TO A CONSIDERABLE EXTENT ON THE DISTANCE BETWEEN CORUNDUM GRAINS AND THE UNIFORMITY OF THEIR DISTRIBUTION. IT WAS FOUND THAT A REFRACTORY MATERIAL WHICH WITHSTANDS EXTREME TEMPERATURE DIFFERENTIALS MAY BE PRODUCED BY PROPER SELECTION OF THE RATIO OF COMPONENTS REFRACTORY CLAY, CORUNDUM AND A CERTAIN AMOUNT OF BORON NITRIDE. FACILITY: INSTITUTE OF PROBLEMS OF STRENGTH, ACADEMY OF SCIENCES OF THE UKRSSR: INSTITUTE OF PROBLEMS IN THE SCIENCE OF MATERIALS, ACADEMY OF SCIENCES OF THE UKRSSR, KIEV.

UNCLASSIFIED

USSR

UDC 517.43

GOMBERG, I. Is. (Corresponding Member, Moldavian SSR) and IZUPNIK, N. Ia.

"Singular Integral Operators on a Complex Contour"

Tbilisi, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol. 64, No. 1, October 1971, pp 21-24

Abstract: This article establishes the necessary and sufficient condition that an operator of the form

$$(A\varphi)(t) = c(t)\varphi(t) + d(t)(S\varphi)(t) \quad (1)$$

be a Φ operator. In the above relationship, $(S\varphi)(t)$ is an operator of the singular integration

$$\frac{1}{\pi i} \int_{\Gamma} \frac{\varphi(\tau)}{\tau - t} d\tau, \quad t \in \Gamma,$$

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USSR

GOKHBERG, I. Ts., et al, Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol. 64, No. 1, October 1971, pp 21-24

and a linear bounded operator in $L_p(\Gamma, \rho)$. Here, Γ is the contour, an oriented curve in the complex plane, consisting of a finite number of closed and open, piece-wise Lyapunov lines; $L_p(\Gamma, \rho)$ is the space L_p ($1 < p < \infty$) in Γ ; $c(t)$ and $d(t)$ are piece-wise continuous matrix functions of the m -th order in Γ , which has a finite number of intersections. A formula is developed for the index of the A operator in equation (1) above, and the symbol for the operator is chosen. This paper generalizes the results already obtained for the case in which Γ has no points of self-intersection.

2/2

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USSR

UDC: 513.88:517.948

GOKHBERG, I. Ts., SEMENTSUL, A. A.

"Töpliz Matrices Consisting of the Fourier Coefficients of Functions With Discontinuities of the Near Periodic Type"

V sb. Mat. issledovaniya (Mathematical Research--collection of works), T. 5, vyp. 4, Kishinev, Academy of Sciences of the Moldavian SSR, 1970, pp 63-83 (from RZh-Matematika, No 5, May 71, Abstract No 5B768)

Translation: An isolated point of a discontinuity ζ_0 ($|\zeta_0| = 1$) of the function $f(\zeta)$ ($|\zeta| = 1$) is called a point of discontinuity of the nearly periodic type of the function $f(\zeta)$ if there exists a uniform, nearly periodic function $p(\lambda)$ ($-\infty < \lambda < \infty$), such that

$$\lim_{\zeta \rightarrow \zeta_0} \left(f(\zeta) - p \left(-i \frac{\zeta + \zeta_0}{\zeta - \zeta_0} \right) \right) = 0.$$

If the condition $\inf |f(\zeta)| > 0$ is satisfied in the neighborhood of the point ζ_0 , then the number $\text{ind}(f, \zeta_0)$ is defined by the equality $\text{ind}(f, \zeta_0) = \lim_{t \rightarrow \infty} \frac{1}{2t} [\arg p(\lambda)]_{\lambda=-t}^{\lambda=t}$.

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- 20 -

USSR

GOKHBERG, I. Ts., SEMENTSOV, A. A., Mat. issledovaniya, T. 5, vyp. 4, Kishinev, Academy of Sciences of the Moldavian SSR, 1970, pp 63-83

Let the function $a(\zeta)$ ($|\zeta|=1$) be continuous everywhere on the unit circle with the exception of the points $\zeta_1, \zeta_2, \dots, \zeta_n$, where there are discontinuities of the nearly periodic type. In the space L_2 and in certain other spaces,

the authors investigate the operator T_a defined by the Töpliz matrix $\|a_{j-k}\|_{j,k=0}^{\infty}$ where a_j ($j = 0, \pm 1, \dots$) are Fourier coefficients of the functions $a(\zeta)$. It is proved, in particular, that such an operator T_a is a Φ_+ or Φ_- operator if and only if the following conditions are satisfied: 1) $\inf_{|\zeta|=1} |a(\zeta)| > 0$; 2) the numbers $\ln |a(\zeta_j)|$ ($j=1, 2, \dots, n$) are simultaneously either all non-negative or all non-positive. Authors' abstract.

2/2

1/2 016 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PULSATING AURORAE IN CONJUGATE POINTS -U-

AUTHOR--(05)-GOKHBERG, M.B., KAZAK, B.N., RASPOPOV, O.M., REDLUGIN, V.K.,
TROYTSKAYA, V.A.
COUNTRY OF INFO--USSR

SOURCE--GEOMAGNETIZM I AERONOMIIA, VOL. 10, NO. 2, 1970, P. 367-370

DATE PUBLISHED-----70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--AURORA, PULSATION, GEOMAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0150

STEP NO--UR/0203/70/010/002/0367/0370

CIRC ACCESSION NO--AP0119152

2/2 016

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119152

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE FEATURES ACCOMPANYING (IN MAGNETICALLY CONJUGATE POINTS) THE ONSET OF PULSATING AURORAE CONSISTING OF INDIVIDUAL SPOTS ABOUT 10 KM IN EXTENT AND SEVERAL SECONDS IN DURATION. SIMULTANEOUS FIELD RECORDINGS AND PHOTOGRAPHIC OBSERVATIONS CONDUCTED IN 1968 IN SOGRA AND KERGUELEN SHOW THAT INDIVIDUAL FLARES OF PULSATING AURORAE ARISE WITHIN ONE SECOND OF EACH OTHER AT THESE POINTS. HOWEVER, EVEN IN THE CASE OF A SIMULTANEOUS ONSET THESE PULSATIONS ARE NOT MUTUALLY CORRELATED, AND IT IS CONCLUDED THAT THEIR SOURCES HAVE A LOCAL NATURE. FACILITY: AKADEMIIA NAUK SSSR, INSTITUT FIZIKI SEMLI, MOSCOW. FACILITY: AKADEMIIA NAUK SSSR, POLIARNYI GEOFIZICHESKII INSTITUT, MURMANSK. FACILITY: LENINGRADSKII GOSUDARSTVENNYI UNIVERSITET, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 531.715.2 531.717.53

SIZONENKO, G. A., BOGRETS, G. N., SHUKIS, Z. E., ~~GOKHBERG, Yu. L., KOLO-~~
DYAZHNYI, A. P., VYKHIST, N. S., MINAKOV, N. A.

"A Device for Measuring the Thickness of Nonmagnetic Coatings on the Inside of Pipes"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 7, Mar 72, Author's Certificate No 329373, Division G, filed 25 Mar 70,
published 9 Feb 72, p 151

Translation: This Author's Certificate introduces a device for measuring the thickness of nonmagnetic coatings on the inside of pipes. The device contains a micrometer unit, a tubular bar, a movable rod, a force-measuring spring, and a head with a permanent magnet connected to the movable rod. The micrometer unit is fastened to the end of the tubular bar which is on the outside of the pipe to be inspected, and the movable rod is coaxial with the tubular bar and is coupled to the micrometer unit. The head with permanent magnet is fastened to the end of the tubular bar on the inside of the pipe to be inspected. As a distinguishing feature of the patent, the device is designed for improved accuracy in measuring the thickness of coatings on

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USSR

SIZONENKO, G. A. et al., USSR Author's Certificate No 329373

the inside of long pipes, and especially those of small cross section. Inside the measurement head is a modular mechanism made up of two rollers wound with a flexible thread fastened by one end to the permanent magnet, and connected by the other end to the force-measurement spring. Also included in the device is a microcontact indicator of the position of the magnet fastened to one of its ends.

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1/2 025 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INFLUENCE OF A DEVIATION FROM NEUTRALITY ON THE ELECTROLUMINESCENCE
OF ZINC SULFIDE SINGLE CRYSTALS -U-
AUTHOR-(04)-GCKHFELD, YU.I., GURU, G.M., DAKHNOVETS, V.T., KOVTONYUK, N.F.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. PCLUPROV. 1970, 4(4), 772-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--SINGLE CRYSTAL, ZINC SULFIDE, COPPER, ELECTROLUMINESCENCE,
DIELECTRIC CONSTANT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/0485 STEP NO--UR/0449/70/004/004/0772/0774
CIRC ACCESSION NO--AP0126237
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126237

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF THE RADIATION ENERGY ON THE POTENTIAL PULSE AMPLITUDE WAS INVESTIGATED FOR INSULATED AND SEMI INSULATED ZNS-CU CRYSTALS BY A PREVIOUSLY DESCRIBED METHOD (1969). FOR INSULATED CRYSTALS, THE DEPENDENCE IS QUADRATIC AND INDEPENDENT OF THE POLARITY OF THE APPLIED POTENTIAL. FOR SEMI INSULATED CRYSTALS, A NO. OF OBSD. PECULIARITIES ARE DISCUSSED. TO OBTAIN HIGH RADIATION ENERGIES, IT IS ESSENTIAL TO INCREASE THE DIELEC. CONSTS. OF THE DIELECS. FACILITY: FIZ. INST. IM. LEBEDEV, MOSCOW, USSR.

UNCLASSIFIED

USSR

GOKHLERNER, M. M. and NEVEL'SKIY, P. B.

"Peculiarities of Heuristic Activity in the Solution of Problems Related to the Continuation of an Unfamiliar Text"

Lingvist. Probl. Avtomatiz. Inform. Poiska [Linguistic Problems of the Automation of Information Retrieval -- Collection of Works], Kiev, 1972, pp 60-70 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V826).

Translation: This article describes an experiment involving guessing the continuation of an unfamiliar text based on information extracted from the preceding text. A method for performing the experiment and its data are presented. Finally, conclusions are drawn concerning the relationship between subjective uncertainty of a text and the heuristic capabilities of man.

Ye. Burgina

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USSR

UDC 621.316.722.1(088.8)

GOKHMAN, M.S., VOLKOV, V.V., GORODETSKIY, V.A., KOSTENKO, M.A. [Spets. konstrukt. byuro "Uralchermetavtomatika"--Special Design Bureau "Ural Ferrous Metal Automatic Equipment"]

"Pulse Regulated Power Supply"

USSR Author's Certificate No 255373, filed 3 Sept 68, published 8 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 128550P)

Translation: The block-diagram is proposed of a voltage regulator with pulse control in which is used a series key [klyuch] regulating element, a series storage choke coil, a reverse semiconductor diode, and a control circuit with a duration modulator. In order to assure triggering of the regulator during turn-on and also after emergency situations, a series circuit of a resistor and a silicon regulator is connected in parallel with the circuit of the series-connected regulating key element and the storage choke coil. 1 ill. S.D.

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1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--INVESTIGATION OF SURFACE TENSION OF SOLID ELECTRODES AT SEVERAL
FREQUENCIES SIMULTANEOUSLY -U-
AUTHOR--~~GUKHSHEIN~~, A.YA.

COUNTRY OF INFO--USSR

SOURCE--ELECTROCHIM. ACTA 1970, 15(1), 219-23

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SURFACE TENSION; ELECTRODE, OSCILLOGRAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1987

STEP NO--UK/0000/70/015/001/0219/0223

CIRC ACCESSION NO--AP0112951

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 018

CIRC ACCESSION NO--AP0112951

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OSCILLOGRAMS OF SURFACE TENSION AMPLITUDE VS. MEAN POTENTIAL WERE OBTAINED FOR SOLID ELECTRODES AT FREQUENCIES 1 AND 5 KHZ PER SEC SIMULTANEOUSLY. THE ELECTRODE MOVEMENT IS A SUM OF 2 INDEPENDENT OSCILLATIONS WITH AMPLITUDES SMALLER THAN AT. DIMENSIONS. FACILITY: INST. ELECTROCHEM., MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--INVESTIGATION OF SURFACE TENSION OF SOLID ELECTRODES AT SEVERAL
FREQUENCIES SIMULTANEOUSLY -U-
AUTHOR--GUKHSHEIN, A.YA. 6

COUNTRY OF INFO--USSR

SOURCE--ELECTROCHIM. ACTA 1970, 15(1), 219-23

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SURFACE TENSION, ELECTRODE, OSCILLOGRAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1987

STEP NO--UK/0000/70/015/001/0219/0223

CIRC ACCESSION NO--AP0112951

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 018

CIRC ACCESSION NU--AP0112951

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OSCILLOGRAMS OF SURFACE TENSION AMPLITUDE VS. MEAN POTENTIAL WERE OBTAINED FOR SOLID ELECTRODES AT FREQUENCIES 1 AND 5 KHZ PER SEC SIMULTANEOUSLY. THE ELECTRODE MOVEMENT IS A SUM OF 2 INDEPENDENT OSCILLATIONS WITH AMPLITUDES SMALLER THAN AT. DIMENSIONS.

FACILITY: INST. ELECTROCHEM., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.165.013

GOKHSHEYN, D.P., TAUBMAN, YE. I., and POTONTSEV, V.G.

"Effect of the Working Fluid on the Thermodynamic Effectiveness of the Rankine Cycle"

Energ. Mashinostroyeniye. Resp. Mezhd. Temat. Nauch.-Tekhn. Sb. [Power Machinebuilding. Republic Interdepartmental Thematic Scientific-Technical Collection], 1972, Vol 14, pp 70-73 (from Referativnyy Zhurnal, No 9, Sep 72. 49. Turbostroyeniye. Single Issue. Abstract No 9.49.12)

Translation: The thermal efficiency dependence of the cycle on the parameter characterizing the properties of the working fluid is analyzed. The efficiency gain of different working fluids is evaluated (Hg, K, Na, H₂O, NH₃, Cl₂, F-30, F-21) and also the maximum range of the thermal efficiency change of the Rankine Cycle at the expense of changing properties of the working fluid. Two illustr., seven biblio. refs.

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USSR

UDC 621.039.524.034.3

GOKHSITEYN, D. P., VERKHIVKER, G. P., TETEL'BAUM, S. D., LEBEDEV, YU. N.,
GRIVANOVA, S. M.

"Estimating the Thermodynamic Efficiency of Cycles of Thermally Dissociating Substances"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb.
(Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i tekhn. Press, 1970, pp 52-60
(from RZh-Elektrotehnika i Energetika, No 5, May 1971, Abstract No 5U187)

Translation: Various types of cycles in dissociating substances are investigated and analyzed. Analysis demonstrated that out of the gas cycles in nitrogen tetroxide the most efficient is the gas cycle with subcritical compression. The economy of the simplest regenerative gas cycles and the gas-liquid cycles in N_2O_4 is higher than in nondissociating gases and low-boiling working mediums. It appears prospective to use thermally dissociating working mediums in multipurpose devices, in particular, in devices for generating electric power and fresh water. There are 4 illustrations, 2 tables and a 4-entry bibliography.

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USSR

UDC: 669.71.411

GOKHSHTEYN, M. B., MOROZOV, Ya. I.

"Method of Determining the Degree of Degassing of Aluminum as a Function of Inert Gas Consumption"

Tr. Vses. N.-I. i Proekt. In-ta Alyumin., Magn. i Elektrod. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1972, No 82, pp 33-36 (Translated from Referativnyy Zhurnal Metallurgiya, No 8, 1973, Abstract No 8G179, by G. Svodtseva).

Translation: During refining of melted Al by an inert gas (Ar or N₂), the degassing influence of the inert gas depends on the quantity of gas forced through, duration of the blow, height of the metal layer, dispersion of gas bubbles, and also the presence of such impurities in the inert gas as water vapor, etc. A method is described for determination of the degree of degassing of Al. A formula is produced for determination of a factor characterizing the refining process, $K_e = D/V_y$, where D is the degassing factor, V_y is the specific consumption of inert gas.

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USSR

UDC 669.715'1'3'782'721

GOKHSHTEYN, M. B., and BAYEVA, Z. P., All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry

"Aluminum-Base Conductor Alloy"

USSR Authors' Certificate No 299560, Cl. C 22c 21/02, filed 12 Feb 68, published 28 May 71 (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 11797P)

Translation: A patent is granted for an Al alloy containing (in %) Fe 0.75-1.5, Cu 0.3-1.0, Si 0.15-0.5, Mg 0.25-0.5, which can be used in the cable industry. Properties of the alloy after annealing at 300°: σ_B 15.4 kg/mm², δ 18.2%, ρ 0.0305 ohm·mm².

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USSR

UDC 669.71.042.6

GOKHSHEYN, M. B., MOROZOV, Ya. I.

"Effect of the Temperature of Processing of the Melt on the Structure of Aluminum"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 71, pp. 118-124. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G133 by the authors).

Translation: Results are presented from experimental works on the determination of the dependence of the structure of technical Al on the heating temperature, holding temperature of the preliminarily heated Al, rate of cooling of the heated melt to the casting temperature, and the determination of the effect of mixing of different temperature alloys on the Al structure. 3 figs; 2 tables; 11 biblio refs.

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USSR

UDC 669.716:621.745.55

GOKHSHTEYN, M. B.

~~"The Mechanism of Silumin Modification"~~

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970,
pp 119-122, resume

Translation: Principal hypotheses suggested for the explanation of Silumin modification are analyzed. Experimental cooling curves by crystallization of Silumin, modified by sodium and calcium and unmodified, and also photographs of appropriate microstructures are presented. It was found that the modifying action of sodium can be explained by retardation of the crystal growth of silicon entering the eutectic, while the modifying action of calcium is explained by the deactivation of admixtures which are the crystallization centers of eutectic silicon. Two figures, three bibliographic references.

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USSR

UDC 616.927-035.371:576.851.49]-039.71-032:611.3]-036.8

(5)

MESHALOVA, A. N., KURLOVA, V. I., TELESHEVSKAYA, E. A., BABINA, V. P.,
GOKHSHEYN, S. E., LIROVA, B. M., LAVROVSKAYA, V. M., TAMARIN, Yu. A., and
NEGINA, Yu. I., Moscow Institute of Vaccines and Sera imeni Mechnikov,
Gor'kiy Institute of Epidemiology and Microbiology, and Moscow Municipal and
Kuntsevo Sanitary Epidemiological Stations

"Peroral Immunization of Humans with Typhoid Vaccines in a Strictly Controlled
Experiment"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1972,
pp 71-77

Abstract: Following a successful trial of enteral immunization of children with
heated typhoid vaccine, larger doses of the same vaccine - heated and chemical -
contained in sugar-coated tablets were given in a double-blind test to 1225
children age 3 to 15 and 274 adults in 2 equal doses 15 to 30 days apart. The
reactions to the vaccine were mild and they generally occurred after ingestion
of the first tablet: in 13.6% and 9.3% those who took the heated and chemical
vaccines, respectively (in 5.8% of those who received placebo). Both vaccines
produced high antibody titers against the O, Vi, and H antigens in the sera of
the children as well as the adults. The authors recommend a major epidemiologi-
cal trial of the vaccines in regions with a high incidence of typhoid.

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USSR

UDC 661.31.7:631.362:538.1

GOKHSHEYN, YA. P., SAFONOV, A. A., LYUBIMOV, V. D.

"Physical-Chemical Behavior of Ceramic $ZrO_2-Y_2O_3$ and ZrO_2-CeO_2 Magnetohydrodynamic Generator Electrodes"

V sb. Magnitogidrodinam. metod polucheniya elektroenergii (Magnetohydrodynamic Method of Obtaining Electric Power--collection of works), vyp. 3, Moscow, Energiya, 1972, pp 328-347 (from RZh-Aviatsionnyye i raketnyy dvigateli, otdel'-nyy vypusk, No 11, Nov 72, Abstract No 11.34.150)

Translation: The multisounding method was used to study the effect of the oxygen partial pressure in argon on the physical-chemical processes in $ZrO_2-Y_2O_3$ ceramic on passage of a current through it. It was demonstrated that during the course of the electrochemical processes on the current leads and in the reduced zirconium dioxide (black zircon), the linear relation between the potential difference and the length of the $ZrO_2-Y_2O_3$ system samples is distorted. The degree of distortion of the curves depends on the oxygen content in the argon. On passage of a current with a density of 2-3 amps/cm² through a refractory electrode made of $ZrO_2-Y_2O_3$ ceramic, its service life is limited to a few hours. The process of cracking of the specimens begins on the cathode. A study was made of the physical-chemical properties of ZrO_2-CeO_2 ceramic. It was demonstrated that zirconium dioxide and cerium dioxide

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GOKHSHEYN, YA. P., et al., Magnitogidrodinam. metod polucheniya elektroenergii, vyp. 3, Moscow, Energiya, 1972, pp 328-347

ceramic is a semiconductor with mixed conductivity. With an increase in the CeO_2 content in the composition, the electron component of the conductivity increases. The number of ion transfers is defined for different compositions of cerium dioxide and zirconium dioxide, and the volt-ampere characteristics are obtained for them. It is demonstrated that the 0.75 CeO_2 - 0.25 ZrO_2 specimens in atmospheric air have maximum electron conductivity and maintain a current of $2\text{-}3 \text{ amps/cm}^2$ for a prolonged period at $1,670^\circ \text{ K}$ without disintegration. There are 7 illustrations, 2 tables and a 12-entry bibliography.

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1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--CRITICAL CURRENT DENSITY THROUGH MAGNETOHYDRODYNAMIC GENERATOR
ELECTRODES MADE FROM ZIRCONIUM DIOXIDE YTTRIUM SESQUIOXIDE CERAMICS -U-
AUTHOR-(02)-GOKHSHTYEN, YA.P., SAFONOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZ. VYS. TEMP. 1970, 8(2), 398-402

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--MHD GENERATOR, CURRENT DENSITY, ELECTRODE, ELECTRODE DESIGN,
ELECTRODE REACTION, OXIDE CERAMIC, ZIRCONIUM DIOXIDE, YTTRIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0487

STEP NO--UR/0294/70/008/002/0398/0402

CIRC ACCESSION NO--AP0137578

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 028

CIRC ACCESSION NO--AP0137578
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DESTABILIZATION, CRACKING, AND WT. LOSS IN ZRO SUB2 (0.85)-Y SUB2 O SUB3 (0.15) SPECIMENS, HAVING EMBEDDED PT ELECTRODES, WERE STUDIED IN AIR AT 1673DEGREESK AND AT C.D. LARGER THAN OR EQUAL TO 3.0 A-CM PRIME2. CATHODIC POLARIZATION MEASUREMENTS AT 0 TO MINUS 3.0 V REVEALED 3 DISTINCT REGIONS FOR EACH CURVE: (1) RISE IN C.D. WITH CHANGE OF EMF. FROM 0; (2) SATN. CURRENT PLATEAU AT MINUS 0.5 TO MINUS 1.2 V; (3) A FURTHER INCREASE IN C.D. WT. LOSSES OF 0.0203-0.1883 G OBSD. IN EXPTS. OF SMALLER THAN 300 HR DURATION AT C.D. SMALLER THAN OR EQUAL TO 3 AM-CM PRIME2 ON 10.963 G SPECIMENS WITH A 25PERCENT APPARENT POROSITY AND D. EQUALS 4.3 G-CM PRIME3 ARE DISCUSSED. MECH. WEAKENING OF SPECIMENS IS ATTRIBUTED TO STRUCTURAL TRANSFORMATIONS IN ZRO SUB2 AT THE CRIT. C. D. OF 0.8-0.9 A-CM PRIME2. FACILITY: INST. VYS. TEMP., MOSCOW, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--OXIDATION OF BORON CARBIDE IN CHROMIC SULFURIC ACID -U-

AUTHOR--(02)-GOKHSHEYN, YA.P., PANKRATYEVA, S.V.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(1), 13-17

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--SULFURIC ACID, ORGANOBORON COMPOUND, OXIDATION, BORON CARBIDE,
CHROMIC ACID, ULTRASONIC EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3004/0909

STEP NO--UR/0032/70/036/001/0013/0017

CIRC ACCESSION NO--AP0131495

UNCLASSIFIED

2/2 033

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0131495

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OXIDN. WAS STUDIED OF B CARBIDE (OF THE COMPN. 29.81PERCENT C, 65.35PERCENT B, 0.41PERCENT OF THE TOTAL B IN THE FORM OF B SUB2 O SUB3, AND SIMILAR TO 2.7PERCENT O, CORRESPONDING TO SIO SUB2, CAO, MGO, B SUB2 O SUB3, R SUB2 O SUB3, AND FE AND AL OXIDES), DISPERSED BY ULTRASOUND IN 62PERCENT H SUB2 SO SUB4 CONTG. CRO SUB3 AND K SUB2 CR SUB2 O SUB7. THE OXIDN. OF B CARBIDE WAS COMPLEX AND COULD NOT BE EXPLAINED BY A SIMPLE REACTION. IN THE BEGINNING, THE OXIDN. PROCEEDED SLOWLY; FIRST OF ALL FREE C IN B CARBIDE AND ONLY APPROXIMATELY EQUAL TO 2PERCENT OF BOUND C WAS OXIDIZED AND SOL. C COMPS. WERE FORMED. DERIVS. OF H SUB2 CO SUB3 AND MELLITIC ACID WERE SUGGESTED. AFTER SOME TIME CONTENTS OF B IN THE SOLN. SHARPLY INCREASED AND AFTER GREATER THAN 45-55 MIN, BESIDES B SUB2 O SUB3, ORGANOBORON COMPS. AND CARBONIC ACIDS ALSO WERE FORMED. FURTHERMORE, THIN OXIDN. LAYER CONTG. S ON THE B-CARBIDE SURFACE WAS FOUND, WITH THE RATIO S-O APPROXIMATELY EQUAL TO 1:0.87. FACILITY: INST. VYS. TEMP., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AT0040574

Abstracting Service:
CHEMICAL ABST.

Ref. Code:

4-70 UR0020

G

85656c Spreading of the black zircon zone during the passage of current through zirconium dioxide. Gokhshtein, Ya. P. (Inst. Vys. Temp., Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 140-3 [Phys Chem] (Russ). Solid ZrO_2 electrolyte rapidly becomes black near the cathode in a vacuum and the black zone moves toward the anode. An equation was derived for calcg. the rate of the spreading of this black zone. The reaction occurring on contact of ZrO_2 with Pt cathode gives the product, a black monolayer, which becomes the cathode itself. The formed black zone is removed from the cathode and moves rapidly into the body of the solid, and the reaction product thus becomes the electrode, because of the high elec. cond. of the reaction product relative to the ZrO_2 . HMJR

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1/3 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--SYNAPTIC PROCESSES IN THORACIC ALPHA MOTONEURONS EVOKED BY
SEGMENTAL AFFERENT STIMULATION -U-
AUTHOR-(03)-PREGBRAZHENSKIY, N.N., GOKIN, A.P., BEZHENARU, I.S.
COUNTRY OF INFO--USSR
SOURCE--NEYROFIZIOLOGIYA, 1970, VOL 2, NR 3, PP 279-288
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--NERVOUS SYSTEM, NEURON, BIOPOTENTIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1628

STEP NO--UR/0660/70/002/003/0219/0288

CIRC ACCESSION NO--AP0123469

UNCLASSIFIED

2/3 020

UNCLASSIFIED

PROCESSING DATE--30JCT70

CIRC ACCESSION NO--AP0123459

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN ANAESTHETIZED AND DECEREBRATED CATS SYNAPTIC PROCESSES IN THE VARIOUS FUNCTIONAL GROUPS OF THORACIC MOTONEURONS TH SUBIX, TH SUBXI EVOKED BY STIMULATION OF INTERCOSTAL NERVES WERE STUDIED. IN THE MOTONEURONS OF THE MAIN INTERCOSTAL NERVE ONLY EXCITATORY (MONO, AND POLYSYNAPTIC) SYNAPTIC POTENTIALS WERE RECORDED IN RESPONSE TO STIMULATION OF THE HOMONYMOUS NERVE. STIMULATION OF THE NERVE TO THE EXTERNAL INTERCOSTAL MUSCLE AND OF THE DORSAL BRANCHES WAS NOT ACCOMPANIED BY VISIBLE SYNAPTIC PROCESSES IN THESE MOTO NEURONS THROUGH SMALL POLYSYNAPTIC EPSPS WERE SOMETIMES RECORDED. IN THE MOTONEURONS OR DORSAL MUSCLES THE HOMONYMOUS NERVE STIMULATION LED TO APPEARENCE OF SIMPLE SHORTLATENCY EPSPS. LONG LATENCY IPSPS (OR EPSPS MINUS IPSPS) WERE FOUND IN MOST MOTONEURONES OF THIS GROUP BY STIMULATION OF THE MAIN INTERCOSTAL NERVE. IN OTHER MOTONEURONS OF THIS GROUP STIMULATION OF THE MAIN INTERCOSTAL NERVE (AND THE NERVE TO THE EXTERNAL INTERCOSTAL MUSCLE) WAS NOT EFFECTIVE. IN THE MOTONEURONS OF THE NERVE TO THE EXTERNAL INTERCOSTAL MUSCLE EXCITATORY PSPS (MONO AND POLYSYNAPTIC) WERE EVOKED BY STIMULATION OF THE HOMONYMOUS NERVE AS WELL AS OF THE MAIN INTERCOSTAL NERVE. STIMULATION OF DORSAL BRANCHES DID NOT PRODUCE ANY EFFECT IN THE LAST GROUP OF MOTONEURONS. RECIPROCAL RELATIONS BETWEEN THESE MOTONEURONAL GROUPS WERE NOT OBSERVED. PATTERNS OF SYNAPTIC RESPONSES OF THE RESPIRATORY MOTONEURONS TO SEGMENTAL AFFERENT IMPULSES STUDIED IN SPONTANEOUSLY BREATHING CATS WERE ESSENTIALLY DIFFERENT.

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3/3 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123469

ABSTRACT/EXTRACT--PECULIARITIES OF THE PSPS IN THE RESPIRATORY MOTONEURONS
EVOKED BY SEGMENTAL AFFERENT STIMULATION IN SPONTANEOUSLY BREATHING AND
ARTIFICIALLY VENTILATED CATS WERE DISCUSSED. FACILITY: THE A.
A. BOGUMOLETZ INSTITUTE OF PHYSIOLOGY, ACADEMY OF SCIENCES, UKRAINIAN
SSR, KIEV.

UNCLASSIFIED

USSR

UDC 541.124-16+541.64

BOL'SHAKOV, A. I., MIKHAYLOV, A. I., BARKALOV, I. M., and GOL'DANSKIY, V. I.,
Institute for Physical Chemistry, Academy of Sciences SSSR, Moscow

"Low-Temperature Radiation Mechanism for the Polymerization of Acrylic Acid
in an Alcohol Case, Studied by ESR and Calorimetry"

Moscow, Doklady Akademii Nauk SSSR, Vol 205, No 2, 1972, pp 379-382

Abstract: An attempt was made to optimize conditions to favor the lengthening of the main polymer chains and to suppress the formation of intermediate-size radicals. Since the heat content of the monomers is different from that of the polymers, changes in the heat content, as measured in a calorimeter, were used to follow the reaction products at different temperatures, radiation doses, and for two different states of the matrix. At about 100° K, the yield of the polymer was 80%. Increasing the temperature to 108° resulted in a large reduction of yield. At this point also, the ESR spectra indicated a significant increase in the mobility of the large radicals. Differences in the kinetics appear between reactions performed in the frozen (solid) alcohol matrix and those which took place in a supercooled (liquid) matrix.

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1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--QUALITY AND EFFECTIVENESS OF CONTROLLING THE TEMPERATURE OF THE
FLUIDIZED BED ROASTING OF MOLYBDENITE CONCENTRATES -U-
AUTHOR-(03)-GOLANT, A.I., KORNEYEVA, S.G., STEPANOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--TSVET. METAL. 1970, 43(3), 45-7

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND
OCEANOGRAPHY, MATERIALS
TOPIC TAGS--THERMAL EFFECT, ROASTING FURNACE, FLUIDIZED BED, AUTOMATIC
CONTROL SYSTEM, MOLYBDENUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--3004/1903

STEP NO--UR/0136/70/043/003/0045/0047

CIRC ACCESSION NO--AP0132165

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132165

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE TO DET. THE DECREASE IN LOSS DUE TO INCREASE IN TEMP. BY MEANS OF CHANGING CONTROL, ESTG. THE QUALITY OF AN AUTOMATED SYSTEM OF CONTROL AND ESTG. THE QUALITY OF AN AUTOMATED SYSTEM UNDER NEW CONDITIONS. FOR DET. THE POSSIBILITY OF DEVELOPING A TEMP. CONTROL SYSTEM AND CHANGING THE QUALITY OF TECHNOL. PROCESSES, THE ROASTING TEMP. WAS VARIED IN 20DEGREES INTERVALS FROM 555 TO 575DEGREES. THE STUDY WAS MADE AT VARIOUS TEMPS. DURING 8 HR, THE TEMP. AND AMT. OF THE CHARGE MATERIAL WAS RECORDED THROUGH EACH 5 MIN. A TEST OF THE ASH AND FLAME WAS TAKEN AT THE BEGINNING AND THE END OF EACH RECORDED TEMP. CHANGE. THE CONC. OF S IN THE DUST DECREASED BY 0.23PERCENT; I.E., THE TEMP. CHANGE AFFECTS THE QUALITY OF THE DUST COLLECTED DURING PURIFICATION OF THE EXITING GASES. DECREASING SULFIDES IN THE ASH BY 0.4PERCENT BY LEACHING WITH AMMONIA INCREASES THE RECOVERY OF MO. IN THE SOLN. AND CORRESPONDINGLY LOWERS ITS LOSS. THIS LOSS, IN OBSD. CASES WAS 870 KG MO PER YEAR. DECREASING THE CONC. OF SULFIDES IN THE FLAME BY 2.9PERCENT LOWER THE LOSS OF MO BY 350 KG PER YEAR.

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UDC: 621.382.23.011.222

GEL'VICH, E. A., GOLANT, M. B.

"Selection of Continuous-Action Microwave Oscillator Circuits Stabilized by Means of Superhigh-Q Resonators to Ensure Long-Term and Short-Term Frequency Stability"

Elektron. tekhnika. Nauch.-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific and Technical Collection. SHF Electronics), 1971, vyp. 3, pp 55-62 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6D370)

Translation: This paper classifies continuous-action microwave oscillator circuits stabilized by superhigh-Q ($Q \geq 10^8$) resonators to ensure high long-term and short-term frequency stability. It is shown that the most effective way to ensure both long-term and short-term frequency stability is to use circuits in which the superhigh-Q stabilizing resonator affects the oscillator frequency exclusively through the microwave circuits. Energy is coupled out directly from the superhigh-Q resonator. Five illustrations, bibliography of eight titles. Resumé.

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UDC 621.385.6:621.385.019.3:621.396.6-181.4

GOLANT, M.B.

"Connection Of Miniaturization With Problems Of Standardization, Unification, And Increase Of Reliability Of Microwave Devices"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 4, pp 28-36
(from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A108)

Translation: Miniaturization of low-power microwave devices is a key to the solution of such problems as an increase of the reliability and durability of devices, and standardization and unification of microwave devices. Connected with this is a simplification of the production of the devices along with an increase of the volume of their output and a decrease of costs. It is anticipated that this course will also prove to be promising for large-power devices. 10 ref. G.B.

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GOLANT, M.B.

9(2)

S/019/60/000/01/109/267
D033/D006

AUTHOR: Golant, M.B., and Tager, A.S.

TITLE: A Low-Noise Electron-Beam S.H.F. Amplifier,

PERIODICAL: Byulleten' izobreteny, 1960, Nr 1, p 25 (USSR)

ABSTRACT: Class 2lg, 13₁₇. Nr 125316 (626712/26 of 4 May 1959). To reduce noise, the amplifier contains two sections through which the electron beam passes. The distance between the sections and their supply from a source of d-c or a-c current is so chosen that, in each section, one half of the noisy modulation is amplified while the other half is weakened. As a result, the noise strength at the output of the second section is equal to that at the input of the first section.

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UDC 612.419

SEVAST'YANOVA, L. A., GOLANT M. B., ADAMENKO, V. G., and VILENSKAYA, R. L.,
Institute of Experimental and Clinical Oncology, Academy of Medical Sciences
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"Effect of Microwaves on Change in the Number of Bone-Marrow Cells Caused by
Antineoplastic Chemotherapeutic Agents"

Moscow, Biologicheskiye Nauki, No 6, 1971, pp 58-59

Translation: Experiments were performed on mice to study the effect of the
antineoplastic agents sarcolysin [phenylalanine mustard] and chrysomallin
[antibiotic 2703 - derived from *Actinomyces fluorescens* and containing 3 acti-
nomycins] combined with microwave radiation on bone marrow. The radiation was
found to weaken the effect of the compounds.

In an earlier work we investigated increased resistance to ionizing
radiation following exposure of bone marrow to microwaves [1]. We showed that
preliminary microwave irradiation weakens the effect of x-irradiation. When
the order of the actions was reversed, the effect of x-irradiation was inten-
sified. In both cases we used microwaves with a wavelength of 7.1 mm and
x-rays at doses of 700, 1,400, and 2,100 r. We were unable to achieve a
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SEVAST'YANOVA, L. A., et al., *Biologicheskiye Nauki*, No 6, 1971, pp 58-59

similar effect in an ultrahigh-frequency field with wavelengths of 5.8, 6.5, and 7.8 mm [2].

This article presents data on the effect of microwaves combined with antineoplastic chemotherapeutic agents on the number of bone-marrow cells.

The experimental animals were 120 male mice (C₅₇Bl XCBA)F₁ weighing 25 to 30 g. The animals were exposed to whole-body irradiation in a microwave field with the following parameters: wavelength 7.1 mm, magnetic field strength 2.5 mv/cm², duration of exposure 1 hour. The millimeter range microwave generator has already been described [1,2]. The first group consisted of animals that had not been exposed to microwaves and antineoplastic agents (control). The second included animals exposed to microwaves and given chrysomallin. The third received only chrysomallin. The fourth were irradiated and given sarcolysin. The fifth included animals that received only sarcolysin. The chemotherapeutic agents were administered once intraperitoneally immediately before irradiation: chrysomallin at the rate of 200 μ g/kg and sarcolysin at the rate of 10 mg/kg. The number of nucleated cells (N) in the bone marrow of the right femur was counted 1, 3, 5 and 10 days after the experimental action of the microwaves and compounds or only of the compounds and in the control

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SEVAST'YANOVA, L. A., et al., Biologicheskiye Nauki, No 6, 1971, pp 58-59

animals (N_0).

There was a change in the N/N_0 ratio with time after the administration of chrysomallin. It decreased after 24 hours to 0.7 and after 3 days to 0.5 of the initial value. After 5 days the number of marrow cells increased, but the N/N_0 ratio did not return to normal, constituting 0.7 of the initial value. Twenty-four hours after the combined action of the microwaves and chrysomallin, the N/N_0 ratio decreased to 0.7 as was the case when chrysomallin alone was used. After 3 days its value rose to 0.8 and after 5 days was normal, whereas after treatment with chrysomallin alone, the N/N_0 ratio remained 0.7.

There was also a change in the N/N_0 ratio with time following the administration of sarcolysin. After 24 hours the ratio decreased to 0.4 and after 3 days to 0.1 of the initial value. After 5 days the number of cells increased; N/N_0 was 0.4. After 10 days the number of marrow cells returned to normal. N/N_0 did not drop as abruptly after the combined action of the microwaves and sarcolysin. The lowest N/N_0 after 3 days was 0.3 instead of 0.1. After 5 days it was 0.6 of the initial value, but after 10 days the number of marrow cells returned to normal.

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SEVAST'YANOVA, L. A., et al., Biologicheskiye Nauki, No 6, 1971, pp 58-59

The results of the experiments show that under the influence of micro-waves with a wavelength of 7.1 mm combined with sarcolysin or chrysomallin, the number of bone-marrow cells does not decrease as sharply as when micro-waves are not used. Moreover, the rate of restoration of the cell count increases after the combined action.

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UDC 535.2:665.123

VILENSKAYA, R. L., GEL'VICH, V. A., GOLANT, M. B., and SMOLYANSKAYA, A. Z.,
Institute of Experimental and Clinical Oncology, Academy of Medical Sciences
USSR, and Institute of the Electronic Industry

"Effect of Millimeter Radiation on Colicin Synthesis"

Moscow, Nauchnyye Doklady Vysshey Shkoly, Biologicheskiye Nauki, No 7, 1972,
pp 69-71

Abstract: Exposure of the colicinogenic E. coli strain C600(E₁) to wavelengths ranging from 6.5 to 6.59 mm resulted in marked induction of colicin synthesis at 6.500, 6.530, 6.555, and 6.590 mm a lesser effect at 6.535, 6.560, and 6.575 mm, and induction almost indistinguishable from that of the control at 6.510, 6.540, and 6.570 mm. Thus, the relationship between the induction coefficient and wavelength was of a distinct resonance nature. Variation in the irradiation rate from 30 to 0.3 mwt, on the other hand, had almost no effect on the induction coefficient. (The biological effect was sharply decreased only when the irradiation rate was reduced to 0.03 mwt). The lack of relationship between the induction of colicin synthesis and the irradiation rate is cited as evidence for the nonthermal effect of millimeter electromagnetic oscillations.

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physics

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DCS UNNUMBERED DOC, 15 Nov '71 (UNCL) Conf on Plasma
Theory, Kiev, USSR, 19-23 Oct '71

USSR

UDC 533.9:538.561

BULANIN, V. V., GOLANT, V. YE., and ZHILINSKIY, A. P.

"Instability of Decaying Plasma in a Magnetic Field"

Minsk, Kolebaniya i Volny v Plazme. (Oscillations and Waves in a Plasma),
"Nauka i Tekhnika," 1971, pp 114-116

Abstract: Investigation of the diffusion of charged particles in a decaying plasma across a magnetic field showed that the diffusion coefficient depends substantially on the transverse dimensions of the plasma. The authors describe the experimental set-up and their investigations in containers of different dimensions in a uniform magnetic field up to 6000 oe at a helium pressure from 0.08 to 0.15 Torr. The authors succeeded in establishing a strong dependence of the spectrum of the oscillations from 1 to 500 kHz on the diameter of the container, the magnitude of the magnetic field, and the pressure, as well as the existence of a critical magnetic field below which they were unable to observe any further oscillations in the potential. In conclusion, the authors make the point that the growth in amplitude of the oscillations when the diameter of the container with the plasma is decreased corresponds qualitatively to an increase in the coefficient of anomalous
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BULANIN, V. V., et al., Oscillations and Waves in a Plasma, "Nauka i Tekhnika," 1971, pp 114-116

diffusion when the transverse gradient of the charged particle concentration is increased. The article contains 2 illustrations and 3 bibliographic entries.

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1/2 028 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--THE STUDY OF MICROWAVE ABSORPTION BY PLASMA IN A MAGNETIC FIELD -U-
AUTHOR--(03)-BUDNIKOV, V.N., GOLANT, V.E., OBUCHOV, A.A. 6
COUNTRY OF INFO--USSR
SOURCE--PHYS. LETTERS (NETHERLANDS), VOL. 31A, NO. 2, P. 76-7 (26 JAN.
1970)
DATE PUBLISHED--26JAN70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROMAGNETIC WAVE ABSORPTION, MICROWAVE PLASMA, HIGH
FREQUENCY DISCHARGE, PLASMA DENSITY, MAGNETIC FIELD INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1986/0084

STEP NO--NE/0000/70/000/002/0076/0077

CIRC ACCESSION NO--AP0102174

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0102174

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ON MICROWAVE DISCHARGE FORMED AT MAGNETIC FIELD VALUE HIGHER THAN THE CYCLOTRON FIELD (H EQUALS 1 DIVIDED BY $3H$ SUBC) AND A DENSITY EXCEEDING THE CRITICAL (N EQUALS 1 DIVIDED BY $15N$ SUBC) ARE GIVEN. THE CONDITIONS UNDER WHICH THE DISCHARGE EXISTS ARE DETERMINED BY THE CONDITIONS OF H.F. WAVE ABSORPTION BECAUSE OF THE LINEAR TRANSFORMATION EFFECT.

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